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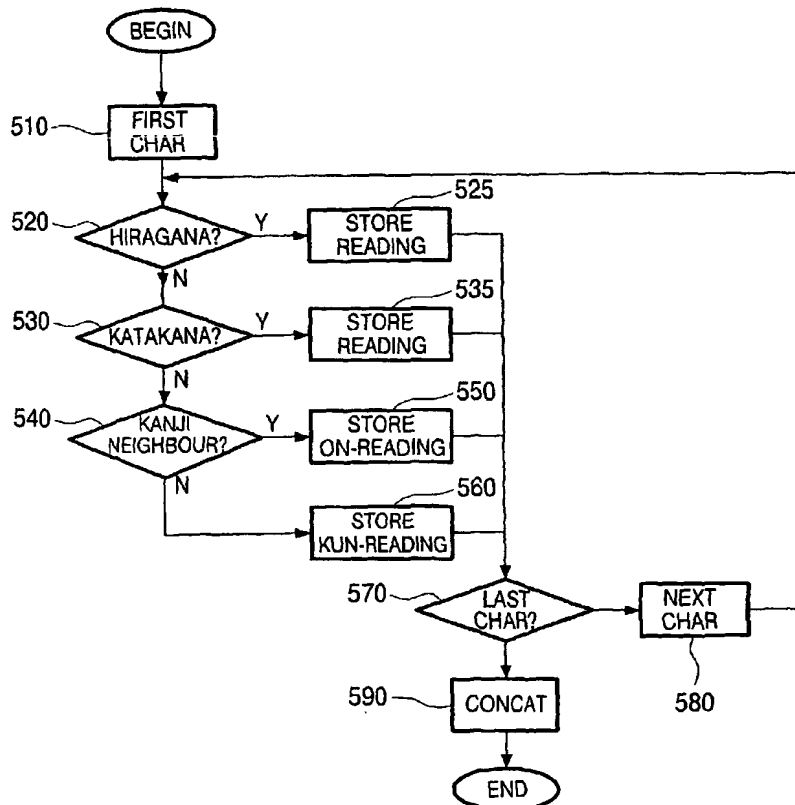
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[Continued on next page]

(54) Title: DETERMINING THE READING OF A KANJI WORD



(57) Abstract: A method of automatically determining a reading of a Japanese word includes for each character determining whether the character is a kanji, hiragana (520), or katakana (530) character. For a hiragana or katakana character the only one reading associated with the character is chosen in step (525, 535). For a kanji character it is determined in step (540) whether or not the immediately preceding character and/or the immediately succeeding character is also a kanji character. If so, for the kanji character an on-reading associated with the kanji character is chosen in step (550). If not, a kun-reading associated with the kanji character is chosen in step (560).



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*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

# INTERNATIONAL SEARCH REPORT

International Classification No.  
PCT/IB 03/02987

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 G06F17/28

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 G06F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ, INSPEC

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	PATENT ABSTRACTS OF JAPAN vol. 012, no. 470 (P-798), 9 December 1988 (1988-12-09) & JP 63 189933 A (FUJITSU LTD), 5 August 1988 (1988-08-05) abstract	1-8
Y	JOSEPH PICONE, TOM STAPLES, KAZUHIRO KONDO, NOZOMI ARAI: "Kanji-to-Hiragana Conversion Based on a Length-Constrained N-Gram Analysis" IEEE TRANSACTIONS ON SPEECH AND AUDIO PROCESSING, vol. 7, no. 6, November 1999 (1999-11), pages 685-696, XP002270910 abstract page 694, left-hand column, line 3 -right-hand column, line 6; figure 10 --- -/--	1-8



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

### \* Special categories of cited documents:

- \*A\* document defining the general state of the art which is not considered to be of particular relevance
- \*E\* earlier document but published on or after the International filing date
- \*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- \*O\* document referring to an oral disclosure, use, exhibition or other means
- \*P\* document published prior to the International filing date but later than the priority date claimed

\*T\* later document published after the International filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

\*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

\*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

\*G\* document member of the same patent family

Date of the actual completion of the International search

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# INTERNATIONAL SEARCH REPORT

International Application No.

PCT/IB 03/02987

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>YOSHIFUMI OYAMA, HISAKO ASANO, KOJI MATSUOKA: "Spoken-Style Explanation Generator for Japanese Kanji using a Text-to-Speech System"</p> <p>NTT COMMUNICATION SCIENCE LABORATORIES, 'Online! 31 October 1996 (1996-10-31), XP002270911</p> <p>Kanagawa, Japan</p> <p>Retrieved from the Internet: &lt;URL:http://www.asel.udel.edu/icslp/cdrom/vol3/263/a263.pdf&gt; 'retrieved on 2004-02-19!</p> <p>page 3, left-hand column, line 17 - line 30; figure 1A</p> <p>-----</p>	2-4

## FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

## Continuation of Box I.2

The subject matter of claims 1-6 does not meet the requirements of the PCT as it has no technical character. Under Article 3(1) the application must be directed to an invention which must be described in terms of its technical features (Rule 6.3 PCT).

The steps of claim 1 would all be carried out by a person and are, therefore, not technical features.

A person would determine the reading of a Japanese word. Merely stating that the method is automatic, without any specific enabling features, is not sufficient to make the method technical.

A person would receive a string of at least one character representing a Japanese word. Merely calling the string an input string is not sufficient to make the method technical.

A person would determine for each character whether it is a kanji, hiragana or katakana character.

A person would determine whether or not the character immediately preceding or succeeding a kanji character is also a kanji character and choose to associate the on-reading with that character or choose to associate the kun-reading with the character otherwise.

A person would concatenate the corresponding readings of each character of the Japanese word and use the concatenated reading. Merely stating that the reading is outputted is not sufficient to make the method technical.

Claim 1 and dependent claims 2-6 thus fail to comply with the prescribed requirements to such an extent that a meaningful search of the full scope of the claims could not be carried out (Article 17.2aii; 17.2b PCT). The claims have been searched according to the technical implementation in the description whereby the method of automatically determining a reading of a Japanese word is performed on a computer.

The applicant's attention is drawn to the fact that claims, or parts of claims, relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure.

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/IB 03/02987

## Box I Observations where certain claims were found unsearchable (Continuation of Item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☒ Claims Nos.:  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:  
see FURTHER INFORMATION sheet PCT/ISA/210
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box II Observations where unity of invention is lacking (Continuation of Item 2 of first sheet)

This International Searching Authority found multiple inventions in this International application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

### Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

# INTERNATIONAL SEARCH REPORT

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PCT/IB 03/02987

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
JP 63189933	A	05-08-1988	NONE